

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listing of claims in the application. Deletions to the claims are indicated by strikethrough. Additions to the claims are indicated by underline.

Listing of claims:

1-49. (Cancelled)

50. (Previously Presented) An isolated nucleic acid molecule comprising a nucleotide sequence which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO: 10.

51. (Currently Amended) An isolated nucleic acid molecule comprising a nucleotide sequence that is at least 25 consecutive nucleotides of SEQ ID NO: 9, which encodes an F-box polypeptide, or a fragment thereof, ~~said nucleic acid molecule comprising a nucleotide sequence of SEQ ID NO: 9~~.

52. (Currently Amended) An isolated nucleic acid molecule comprising a nucleotide sequence derived from a mammalian genome that:

a) hybridizes under highly stringent conditions to the complement of nucleotide sequence of SEQ ID NO: 9; and

b) encodes a gene product which contains an F-box motif and binds to Skp1₂,

wherein said highly stringent conditions comprise hybridization in a buffer consisting of 0.5M NaHP0₄, 7% sodium dodecyl sulfate (SDS), 1mM EDTA at 65°C, and washing in a buffer consisting of 0.1xSSC/0.1% SDS at 68°C.

53. (Previously Presented) A nucleotide vector containing the nucleic acid molecule of Claim 50, 51 or 52.

54. (Previously Presented) An expression vector containing the nucleotide sequence of Claim 50, 51 or 52, in operative association with a nucleotide regulatory sequence that controls expression of the nucleotide sequence in a host cell.

55. (Previously Presented) A genetically engineered host cell that contains the nucleotide sequence of Claim 50, 51 or 52, in operative association with a nucleotide regulatory sequence that controls expression of the nucleotide sequence in the host cell.

56. (Withdrawn) A transgenic animal having cells which harbor a transgene comprising the nucleic acid of Claim 50, 51 or 52.

57. (Withdrawn) An animal inactivated in the locus comprising the nucleotide sequence of Claim 50, 51 or 52.

58. (Withdrawn) An isolated F-box polypeptide having the amino acid sequence of SEQ ID NO: 10.

59. (Withdrawn) An antibody that immunospecifically binds the polypeptide of Claim 58.

60. (Withdrawn) A method of diagnosing proliferative and differentiative related disorders comprising measuring FBP5 gene expression in a patient sample.

61. (Withdrawn) A method for screening compounds useful for the treatment of proliferative and differentiative disorders comprising contacting a compound with a cell expressing an F-box polypeptide having the amino acid sequence of SEQ ID NO: 10, or a fragment thereof, and its substrate, and detecting a change in the F-box polypeptide activity.

62. (Withdrawn) The method of Claim 61 wherein the change in the F-box polypeptide activity is detected by detecting a change in the interaction of the F-box polypeptide with one or more polypeptides.

63. (Withdrawn) The method of Claim 62 in which one of the one or more polypeptides is the substrate of the F-box polypeptide.

64. (Withdrawn) The method of Claim 62 in which at least one of the one or more polypeptides is a component of the ubiquitin pathway.

65. (Withdrawn) The method of Claim 62 in which one of the one or more polypeptides is Skp1.

66. (Withdrawn) The method of Claim 61 wherein the change in the F-box polypeptide activity is detected by detecting a change in the ubiquitination or degradation of the substrate.

67. (Withdrawn) A method for screening compounds useful for the treatment of proliferative and differentiative disorders comprising contacting a compound with a cell or a cell extract expressing Fbp5 and one or more Fbp5 substrates, and detecting a change in the activity of Fbp5.

68. (Withdrawn) The method of Claim 67 wherein the change in the activity of Fbp5 is detected by detecting a change in the interaction of Fbp5 with one of the one or more Fbp5 substrates.

69. (Withdrawn) The method of Claim 67 wherein the change in the activity of Fbp5 is detected by detecting a change in the ubiquitination or degradation of one of the one or more Fbp5 substrates.

70. (Withdrawn) A method for treating a proliferative or differentiative disorder in a mammal comprising administering to the mammal a compound to the mammal that modulates the synthesis, expression or activity of the FBP5 gene or gene product so that symptoms of the disorder are ameliorated.

71. (Withdrawn) The method of Claim 70 in which the disorder is breast cancer.

72. (Withdrawn) The method of Claim 70 in which the disorder is ovarian cancer.

73. (Withdrawn) The method of Claim 70 in which the disorder is prostate cancer.

74. (Withdrawn) The method of Claim 70 in which the disorder is small cell lung carcinoma.

75. (New) An isolated nucleic acid molecule comprising a nucleotide sequence that is at least 25 consecutive nucleotides from nucleotide position 1 to nucleotide position 1409 of SEQ ID NO: 9, which encodes an F-box polypeptide, or a fragment thereof.

76. (New) An isolated nucleic acid molecule comprising a nucleotide sequence which encodes a polypeptide comprising an amino acid sequence which has at least about 95% similarity to SEQ ID NO: 10 and binds to Skp1.